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TITLE: Scratch resistant **IR absorption** filter made by coating process - comprises filter with **IR absorbing** layer contg. (meth)**acrylate** copolymer on transparent resin substrate and scratch resistant coating

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PRIORITY-DATA: 1990JP-0303241 (November 7, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 04174403 A	June 22, 1992	N/A	013	G02B 005/22

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP 04174403A	N/A	1990JP-0303241	November 7, 1990

INT-CL (IPC): G02B001/10, G02B005/22

ABSTRACTED-PUB-NO: JP 04174403A

BASIC-ABSTRACT:

The **IR absorbing** layer is made of (a) 100 pts. wt. copolymer made of 50 - 90 pts. wt. of meth **acrylate**, ethyl **acrylate**, methyl **methacrylate** or ethyl **methacrylate**, and 10 - 40 pts. wt of hydroxy methyl **acrylate**, hydroxy ethyl **acrylate**, hydroxy propyl **acrylate**, hydroxy methyl methacrylate, hydroxy ethyl **methacrylate**, hydroxy propyl **methacrylate**, or a (meth)**acrylic** acid cpd. having an amide group, a (meth)**acrylic** acid compound having a nitrile group, a (meth)**acrylic** acid compound having an epoxy group, and (b) 0.025 - 5 pts. wt. of an **IR absorbing** agent chosen from aminium (sic) type, metal complex type, anthraquinone type and **diimonium** type, and the scratch resisting layer is made of (i) 100 pts. wt. of a hydrolysed substance and partially condensation prods. of a mixt. of alkoxy silanes of R1Si(OR2)3 and Si(OR3)4 R1, R1 and R3 methyl, ethyl or propyl group) at the molar ratio of 7:3 - 10.0, (ii) 2.5 - 10 pts. wt. of SiO2 powder, (iii) 1.5 - 3.5 pts. wt. of a copolymer made of 60 - 90 pts. wt. of methyl or ethyl (meth)**acrylate**, and 10 - 40 pts. wt. of a hydroxy meth(or ethyl or propyl) (meth)**acrylate**, a (meth)**acrylic** acid compound having an amide (or nitril) group, (iv) 0.75 - 2 pts. wt. of an epoxy resin, and (v) 0.25 - 1 pts. wt. of a hardening catalyst.

USE/ADVANTAGE - The **IR absorption** filter has a high surface hardness, and since the **IR absorption** layer mainly contains a polymer, the capacity of the **IR absorption** is not damaged by heat-decomposition and the selectivity of the **absorption** of the specific wave length can be raised. The product shows very high function, reliability, durability and can be used in many fie

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: SCRATCH RESISTANCE **INFRARED ABSORB** FILTER MADE COATING PROCESS